THE SCIOTO MARSHES OF OHIO: A STUDY IN THE GEOGRAPHY OF ONION CULTURE.[1]

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THE AREA AS A UNIT.

The Scioto Marsh, a bog soil province in the western part of Hardin County, is the largest of several such areas in the glaciated region of Ohio. The term "Marsh" is no longer used here in the technical sense, but is a "carry over" from the days before the area was drained. It extends over 16,000 acres[2] and is believed to be one of the largest continuous onion producing areas in North America. Here the growing onion characterizes the summer landscape. The subject of its culture is foremost in local conversation. Onion cultivation leads successively to a condition of distinct wealth or relative poverty. It motivates an interstate migration of interesting laborers and furnishes the raison d'etre of three settlements within the local region.

The greatest agricultural interest of most of the landowners is the onion. On an average about 3,500 acres of onions are harvested. In recent years the acreage has diminished largely as a result of several years of unfavorable climatic conditions which minimized the merchantable yield per acre. In 1915, an exceptional year, over 5,500 acres were harvested.

In approaching the region from all directions one sees distinctly the terminal moraines and other glacial deposits. (Fig. 1.) The deposits at the north are part of the watershed between the Ohio River system and the Lake Erie drainage basin. The drumlins and kames at the west and south enclose the marsh and divide the waters of the Scioto Valley from those of the Miami Valley. The gravel from these glacial deposits has been used in making the numerous roads within the marsh and as well in making the deep "fills" in the construction of the Erie Railroad across parts of the former bog.

[1]The writer acknowledges much helpful advice given by Dr. Eugene Van Cleef and other colleagues in the preparation of this study.

[2]Dachnowski, Alfred. Peat Deposits; Geological Survey of Ohio, Bulletin 16 (1912), p. 72.

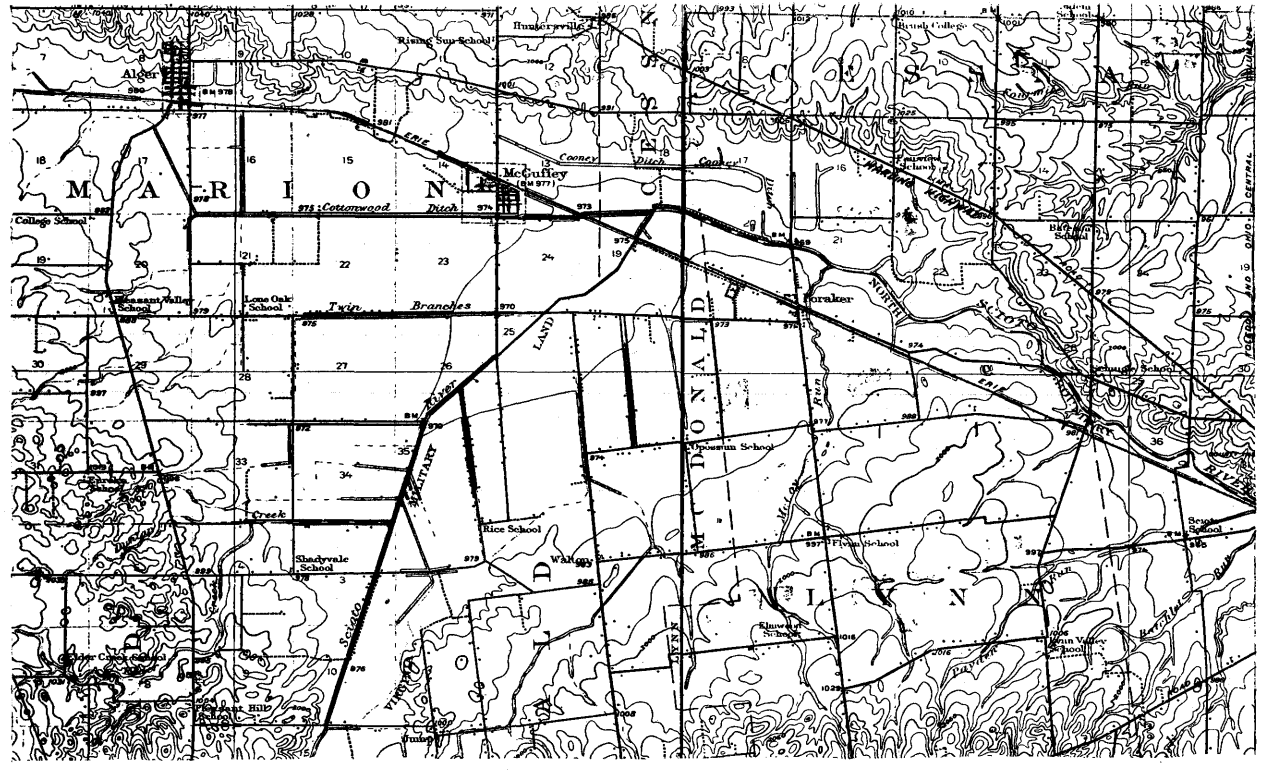

FIG. 1. Topographic map of Western Hardin County, including the area of the Scioto Marsh. (Scale: 1 inch = 1 mile. Contour interval 10 feet.)

LOCATION AND ACCESSIBILITY.

The area is crossed by the main line of the Erie Railroad and is less than ten miles away from the main line of the Pennsylvania Railroad, both roads connecting Chicago and New York City. It benefits by proximity to these lines of transport, for by a very short haul the agricultural crops can readily be exported to the great centers of food consumption. Paved roads through the middle of the marsh join the east-west Harding Highway, one of the main federal highways in North Central Ohio. Gravel roads built upon the banks of the dredged streams provide access to every farm and facilitate the speedy movement of the crops to the trunk highways and railways.

THE SOIL AND DRAINAGE.

The Scioto Marsh is the drained area of a former glacial lake.[3] For approximately 10,000 years the basin was in the process of being filled by the accumulation of vegetation.[4] It was deposited over layers of shell marl and clay which were washed into the former lake by the freshet streams which flowed into it. This action has produced a layer of peat material from two to ten feet in depth. The peat material, which coincides with the 980 foot contour line, provides a deep soil of amazing fertility. This region ranks among the best farming land in Ohio.

The floor of the basin is perfectly flat and unbroken in appearance save by the low dikes along the dredged water-courses. Rows of willow trees planted to serve as windbreaks cut the agricultural land into many plots, but these trees only accentuate the flatness of the great lacustrine plain. (Figs. 2, 3.)

Artificial drainage of the bog marsh was begun in 1859, but little was accomplished. It was resumed in 1883 and virtually completed in 1887. The Scioto River, which enters the Marsh at the southwest was, before drainage, said to be "lost" in the bog. One of the pioneers said that there was no river channel and that the present arbitrary course of the river

[3]Winchell, N. H. Geological Survey of Ohio; Vol. II, p. 353.

[4]Dachnowski. *op. cit.*, p. 73. "It is believed that the Indians by burning the grasses and sedges for the purpose of driving game from their hiding places delayed the filling of the basin."

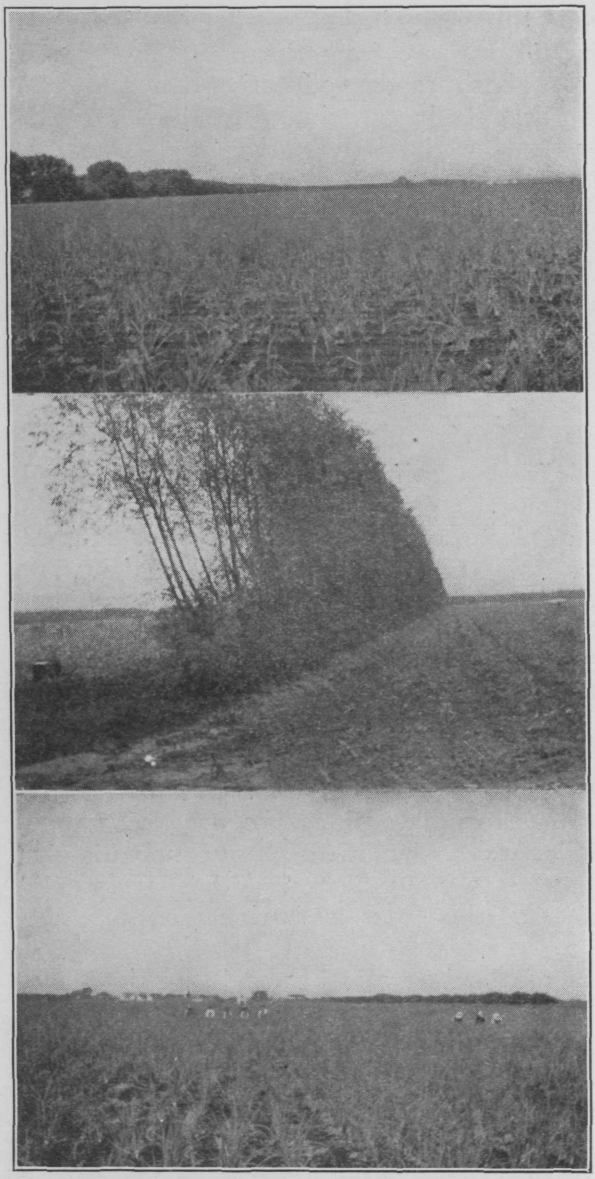

Fig. 2. The Scioto Marsh area includes 16,000 acres of distinctly level land.

Fig. 3. Willow trees are planted to break the force of the winds which in early spring cause severe losses by blowing away the loose "muck" and seeds before rooting has started.

Fig. 4. Each "weeder" cleans two rows as he crawls along protected against the hot sun by his wide-brimmed straw hat.

Fig. 5. A characteristic "workers" house provided for the migratory laborers from Kentucky. Most of these are located upon the dikes of drainage ditches.

Fig. 6. The method of filling the crates is fairly simple. Sheep-shears are used to cut the tops, which are discarded and left to fertilize the soil.

Fig. 7. Permanent storages (right) located near the double tracked Erie Railroad facilitate the speedy shipment of the crop to the chief centers of consumption.

is the result of the surveyor's lines. The present straight course of the river (Fig. 1) seems to lend support to this statement. Drainage lowered the natural outlet of the Marsh at the eastern apex of the lowland triangle. The main channel of the Scioto River was joined by many lateral ditches. In these ditches the sluggish speed of the water causes considerable silting. Almost constant dredging is necessary to keep them functioning properly.

Drainage has transformed the former bog into an agricultural province which is today completely cultivated. Excessive drainage has transformed the surface peat in several localities into a fine-grained material which is readily eroded by the wind. Dust storms in early spring are not an uncommon occurrence.

CLIMATE.

The distribution of temperature and rainfall during the growing season, May to September, is ideally suited to the onion crop. The period between the last killing frost, dating about May 5, and the first killing frost, averaging October 7, gives a growing season of about 154 days.[5] During this period the range of the average monthly temperatures lies between 60° F., for May, and 73° F., for July.

The rainfall during this season averages somewhat over half of the normal annual rainfall of 36 inches. (Chart 1.) September, the driest month of the growing season, is favorable for the harvesting and field storage of crops. The spring season usually is humid and windy. However, in some years an early drought occurs and then the wind is free to blow away the fine dried-out peat as mentioned before.[6]

Very high and very low temperatures are frequently recorded but these rarely affect the growing crop. From 1920 to 1930 the average of the annual maximum temperatures was 96.3° F. The minimum temperatures during the above decade averaged —7.6° F. The low winter temperatures are dangerous to stored onions unless the warehouses, called storages, are constructed extra well or have heating facilities.

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[5]Peattie, Roderick. Geography of Ohio, Bulletin 27 of the Ohio Geological Survey, pp. 18–20. (After W. H. Alexander, Meteorologist, United States Department of Agriculture.)

[6]In some years the onion fields must be seeded three times due to wind erosion.

CULTIVATION IN RELATION TO CERTAIN WEATHER CONDITIONS.

Abnormally humid spring weather will check the growth of the onion roots so much that the plants tend to grow on top of the ground with the general result that the bulbs are of small size, although the tops have grown very high. When a thunderstorm is followed by hot sunshine the tops are "scalded" and growth then ceases.

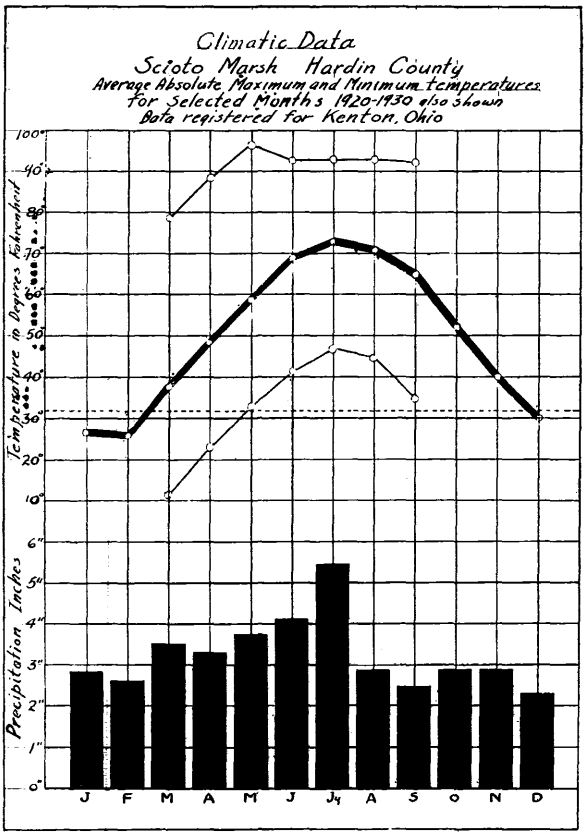

CHART 1.

A fairly dry spring seems to produce a great root length and a good plant. A series of fairly dry seasons has provided high merchantable yields while a series of wet seasons has resulted in the growth of small onions of relatively low market value.[7]

[7]Table I, yield for 1922. Excess rainfall 10.45 inches.

While a season of slight drought is favorable for onion crops, a particularly dry summer tends to bring about a fire hazard. Peat soil is combustible.[8] In 1914 a "muck fire" damaged nearly 100 acres of excellent soil and so threatened the whole area that it was necessary to call the state militia for fire-fighting purposes.[9]

THE PEOPLE.

Three village settlements—Alger, Foraker, and McGuffey—are located within the area. They act as "service stations" and cater to the simpler wants of the people in supplying groceries, everyday clothing, and other necessities. To some degree they are important as places of amusement. They are the shipping centers for the agricultural surpluses, each of them being served direct by the Erie Railroad.

A form of trans-humance is practiced by a great number of laborers who migrate between this locality and their original homes in the "Mountain Country," mostly from Breathitt, Perry and Letcher and adjacent counties in southeastern Kentucky. It is not definitely known why these people were attracted to this area, but it is reported that they were induced to come by some of the growers who saw the need of a great many seasonal laborers who could be depended upon to work conscientiously (for relatively low wages).[10] It is estimated that on an average somewhat over 400 families make the annual migration. They travel for the most part in their own automobiles.

The clannish customs and suspicious ways prevailing among these people are rather striking in contrast to life of the local land owners and permanently resident farmers. These laborers are sociable among themselves, but non-communicative to the casual traveler; however, after proper introductions are made they are ready conversationalists. They tend to retain and use curious words which are associated with the Elizabethan Age in England. The writer noted such common expressions

[8]An analysis of soil taken in the middle of the area by Dachnowski (Footnote 2) showed that dry peat contains volatile matter of 59%, fixed carbon 27%, sulphur 1.2%, nitrogen 3.4%. Dachnowski, *op. cit.*, p. 73.

[9]Information given to the writer by Judge W. W. Bowers, Secretary of The National Onion Grower's Association, Kenton, Ohio.

[10]Conversation with Mr. Val McGuffey, a pioneer resident of McGuffey, Ohio. He reported also that Negro labor was used formerly for a short time, but that it was unsuccessful presumably due to the social friction which occurred.

as "yit" for yet, "git" for get, "clum" for climbed, "fur" for for, "holp" for help. They refer to their luggage as a "budget." When one hears that the onion "crap" was "mightily plenteous" he is carried back to Elizabethan England.

These folk are honest, but not particularly thrifty. Some who elect to remain in the area during the winter in certain years are often dependent upon official charity even when their earnings have been considerable.

Meagerly furnished houses of one or two rooms (Fig. 5) are provided generally without cost to these migratory families. It seems that such houses are no better or worse than the cabins in which they live in the Kentucky Mountains.[11]

PRODUCTION MECHANICS.

The seeding of the onion lands begins normally about the first of May. Seeds are planted in rows about twelve to fourteen inches apart. Both domestic and foreign seeds are used; a few of the growers produce their own seed. Virtually no stirring of the soil is necessary in cultivation, but the problem of weed eradication is a large one. While on some farms the hand wheel hoe has been adopted as the means for keeping the crop clean, generally it is found that hand-weeding is the most practicable and profitable. Men, women, and children, on hands and knees, and wearing broad-brimmed straw hats (Fig. 4) crawl back and forth along the rows (each person taking two rows or more) pulling the weeds as they go. They drop them in place where they soon wither under the hot rays of the summer sun. Weeding must be done continuously owing to the fact that the weeds thrive as well in the rich soil as the onion itself. Although the weeds do not seed themselves, copious quantities of seeds are blown in from the surrounding lands to aggravate the problem annually. The great labor expense for weeding is believed by many of the growers to be a large cause for the small profits in the onion industry within this area.

Harvesting begins when the onion tops begin to wither. This is usually in mid or late August and very rarely does it begin later than September 1. Some growers stop the growth of the onion by lightly rolling the tops to break them, thus

[11]Davis, D. H. Journal of Geography, Vol. XXIX. (1930), pp. 90–91. (Photographs of Mountain Cabins in southeastern Kentucky.)

gaining a slight time advantage in early marketing. The onions are pulled by hand. On most of the farms it is the practice to throw several rows of onions together for a few days drying before the topping begins.

The "toppers" hold a large handful of onions over a crate (Fig. 6) and snip the tops with sheep shears. The crates when filled are stacked usually four crates high for further drying and covered with tar paper to await the buyer.

The grading and cleaning of the onions is done in a long inclined slatted rack into which they are dumped crate by crate. They are mulled over by hand to push the small onions through the slats and to loosen the excess onion skins which with the clinging soil falls or blows away. This is done in the fields and in field storages. Onions larger than one and three-eighths inches in diameter are classified as U. S. No. 1, known to the trade as "boilers;" those smaller are called "picklers." For shipping they are packed in bags of 100 pounds, stamped with the proper grades for the market.

MARKETING THE CROP.

Nearly all of the average crop of 1,000,000 bushels (Table I) is handled by brokers, called "buyers," many of whom are growers as well. In a poor season of low production, buying may begin even before harvest, but usually it begins as harvesting is finished. The brokers have wide contacts in the large consuming centers in all parts of the United States and Canada, while the tenant or "share-farmers" have none and of necessity pass to the buyers the job of placing the crop on the market. Competition is frequently keen among the buyers, especially for certain kinds and classes of onions. Personal honesty ranks high and virtually all of the sales contracts are made orally. The writer witnessed one sale of 20,000 bushels which was consummated by a single offer and acceptance which took less than a minute after an inspection of three crates of onions had been made.

Onions are perishable and little if any of the crop may be successfully or profitably stored after April 1, even in the best storages. (Fig. 7.) Few of the growers care to attempt long storage in common onion sheds on the farms for the winters with freezing weather bring disastrous results to a commodity with such a high water content.

The distribution of the crop is wide. Coal mining regions and steel making centers are especially good markets and have been found to provide a greater per capita consumption than other centers. Southern markets seem to demand Ohio onions, and a great many cars are sent to Louisville, Atlanta, Birmingham and Memphis. New York City buys 18 cars of onions per day. Chicago consumes nearly four cars per day.[12] The total average annual shipment to all markets is 1,800 cars.

TABLE I.

PRODUCTION OF ONIONS IN HARDIN COUNTY, OHIO, 1920–1930.
(Data from U. S. Department of Agriculture.)

YEAR	BUSHELS	ACREAGE HARVESTED	BUSHELS PER ACRE
1920	1,158,000	f	340 g
1921	617,000	f	225 g
1922	1,550,000 c	f	400 g
1923	780,000	f	253 g
1924	1,504,000	4,050	350
1925	255,000 a	1,200	298
1926	582,000	2,500	247
1927	1,500,000	4,400	330
1928	530,000	3,500	147 b
1929	930,000	4,300	260
1930	1,056,700 e	3,800 d	278
Average	951,150	3,583	284

a. Severe drought. Precipitation April–September, 9.87 inches. (Normal, 17.72 inches.)
b. Severe maggot infestation.
c. Copious rainfall. Precipitation April–August, 28.17. Normal, 17.72; excess, 10.45.
d. Decreased acreage probably due to low prices of 1929.
e. Preliminary estimates.
f. Data not available.
g. Data by Mr. H. C. R. Stewart, Crop Reporting Service, United States Department of Agriculture.

RELATION TO OTHER GROWING AREAS.

Ohio onions must compete with those grown in many other states, as well as with importations from abroad. Smaller onion producing areas are located in many parts of northern Indiana and Illinois, southern Wisconsin and Michigan, in many parts of western New York, here and there in New

[12]Conversation with Hon. J. B. Stambaugh, Ada, Ohio, former president of the National Onion Grower's Association.

England. There are scattered fields in southeastern Texas and still other widely separated fields. (Fig. 8.)

Twenty-five foreign nations ship onions in varying amounts to the United States. Spanish onions come in at the same time the Scioto crop is being harvested. England, Germany, Denmark, Canada, and even far-away Australia are general competitors.

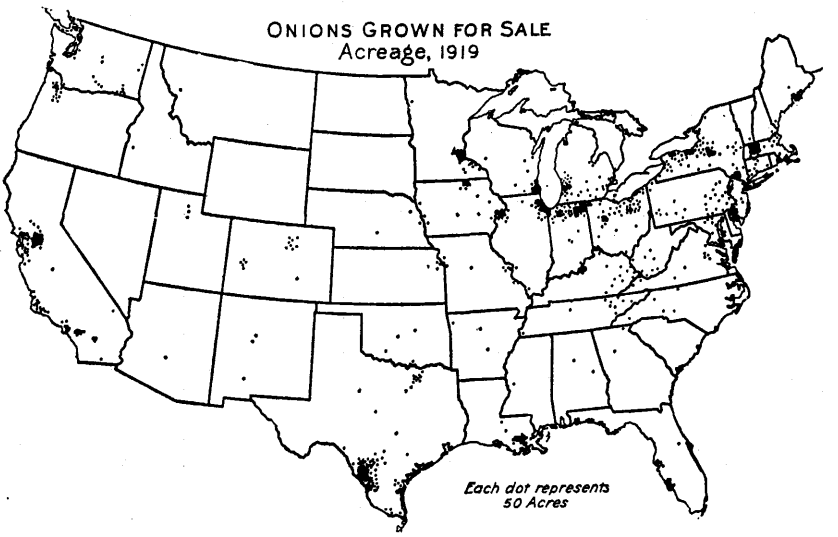

Fig. 8. Distribution of onions grown for sale in the United States. (U. S. D. A.)

The National Onion Grower's Association has succeeded in securing an increase in the tariff rate from 1 cent to 1½ cents per pound, an increase of 50%, which became effective on January 1, 1929. This was raised by the Smoot-Hawley Bill of 1930 to 2½ cents per pound. This is expected to give some advantage to domestic producers everywhere. The industry is one of large proportions and according to many of the Scioto Marsh growers has been an industry of very small profits for the past four years. However, should foreign importations be sharply reduced under the new tariff act of 1930, as is confidently expected, the acreage on the Scioto Marsh should undoubtedly rise to former high levels.